

PATENT CLAIMS

1. A vehicle seat for supporting a weight and to be supported on a vehicle floor, the vehicle seat comprising a height adjusting mechanism having a pivot point, the vehicle seat further comprising a sitting area for supporting the weight, a seat frame for supporting the sitting area, a supporting frame for supporting the seat frame at a predetermined distance from the vehicle floor and connecting the vehicle seat to the vehicle floor, a height-adjusting device for varying the distance of the seat frame from the vehicle floor, the height adjusting device comprising at least three load cells being spaced apart, non-linearly disposed, and disposed to respond to the weight supported on the sitting area and supply a weighing signal corresponding to the weight, the weighing signal resulting from a distance measurement, the load cells each comprising a one-piece force transducer with an elastically deformable part and a non-deforming part, the non-deforming part being fixed to one of the supporting frame and the pivot point for the height-adjusting mechanism, the elastically deformable part being secured to the other of the seat frame and a pivot point of the height-adjusting mechanism.
2. The vehicle seat according to Claim 1, wherein the force transducer is an inductively operating force transducer.
3. The vehicle seat according to Claim 1, wherein the supporting frame is disposed on the vehicle floor to be displaceable in a longitudinal direction of the vehicle and optionally fixed in the longitudinal direction.
4. The vehicle seat according to Claim 1, wherein the sitting area of the seat disposed on the supporting frame to pivot about an axis disposed transversely in relation to the longitudinal direction of the vehicle.
5. The vehicle seat according to Claim 1, wherein the load cells comprise a temperature sensor.

6. The vehicle seat according to Claim 1, wherein the load cells are connected to an evaluation circuit, said evaluation circuit preprocessing said weighing signals and providing an output signal at an interface for the electronics of the vehicle.
7. The vehicle seat according to Claim 6, wherein the output signal is a signal which designates one of a number of predetermined weight classes.
8. The vehicle seat according to Claim 6, wherein the evaluation circuit is connected to a temperature sensor which produces a temperature signal, the evaluation circuit receiving the temperature signal and making a temperature correction of the weighing signals.
9. The vehicle seat according to Claim 6, wherein the evaluation circuit is formed in such a way that it evaluates the weighing signals of at least a portion of the load cells to determine the center of gravity of the load acting on the sitting area.
10. The vehicle seat according to Claim 6, wherein the evaluation circuit comprises a diagnostic unit, said diagnostic unit performing a check on functional capability of the load cells at predetermined time intervals or when predetermined events occur.
11. The vehicle seat according to Claim 8, wherein the evaluation circuit comprises a memory unit for recording the weighing signals of the load cells over a predetermined time period.
12. The vehicle seat according to Claim 11, wherein the memory unit comprises memory areas for storing results of at least a portion of the preprocessing of the weighing signals, of the signals of the diagnostic unit, of the signals of the temperature sensor and/or peak loading values of the weighing signals of the force transducers, optionally comprising additional memory areas in which corresponding time signals can be stored.
13. The vehicle seat according to Claim 1, wherein the vehicle seat comprises a mechanical overload protection, said mechanical overload protection limiting the

relative movement of the elastically deformable parts of the force transducers with respect to the non-deforming parts.

14. The vehicle seat according to Claim 13, wherein the mechanical overload protection comprises a stop in the direction of loading and a stop in the direction of loading relief.
15. The vehicle seat according to Claim 14, wherein at least one of the stops is secured to at least one of the seat frame and the supporting frame.